Before the
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
The Establishment of Policies and	)	
Service Rules for the Non-Geostationary	)	IB Docket No. 01-96
Satellite Orbit, Fixed Satellite Service	)	
in the Ku-Band	)	
	)	

REPLY COMMENTS OF SKYBRIDGE

SkyBridge L.L.C. ("SkyBridge"), by its attorneys, hereby replies to the comments of Denali Telecom LLC ("Denali") and PanAmSat Corporation ("PanAmSat") on the Further Notice of Proposed Rulemaking ("FNPRM")[1] in the above-captioned proceeding.' The FNPRM sought comment on proposals for refining the regime adopted by the Commission for sharing among non-geostationary satellite orbit ("NGSO") Fixed-Satellite Service ("FSS") systems in the Ku-band, and also on methods for ensuring compliance with the aggregate equivalent power flux-density ("EPFD') limits that apply collectively to such systems.

I. NGSO/NGSO SHARING

In the Report & Order in this proceeding, the Commission adopted a method for sharing among Ku-band NGSO FSS systems based on avoidance of "in-line events" between

[1] FCC 01-134, rel. May 3,2001 (the "FNPRM"). The FNPRM was issued in conjunction with a Report and Order (the "Report & Order") establishing sharing and service rules for Ku-band NGSO FSS systems. ***See*** Comments on the Further Notice of Proposed Rulemaking, Denali Telecom LLC, IB Docket No. 01-96, September 30,2002 (the "Denali FNPRM Comments"); Comments of PanAmSat Corporation, IB Docket No. 01-96, September 30,2002 (the "PanAmSat FNPRM Comments"); ***see also*** Comments of SkyBridge, IB Docket No. 01-96, September 30,2002 ("SkyBridge FNPRM Comments"); Comments of SkyBridge, IB Docket No. 01-96, July 6,2001 (the "SkyBridge NPRM

satellites of different systems.[2] Under the Commission's approach, all systems would share in the burden associated with such interference avoidance. Although Denali enthusiastically supported this sharing method in its earlier comments: Denali now claims that the Commission has "misinterpreted" Denali's position, and that Denali does not support the method of avoidance of in-line events as adopted by the Commission.[4] Rather, Denali advocates a sharing regime in which highly-elliptical orbit ("HEO") systems, such as its own, would not have to take any steps to share spectrum, and other systems, such as LEOs and MEOs would have to accept the entire burden of avoiding in-line events with HEO systems.'

Comments"); Reply Comments of SkyBridge, IB Docket No. 01-96, August 6, 2001 (the "SkyBridge NPRM Reply Comments").

2 Report & Order, ¶ 27.

3 **See** Comments of Denali Telecom LLC, IB Docket No. 01-96, June 18, 2001 (the "Denali NPRM Comments"), at 2-4. In particular, Denali stated that this approach, which it labeled its "favored option," *id.* at 2, "has the flexibility to achieve, and best promotes, the objectives of spectrum sharing over the other options." *Id.* at 2. Denali also noted that its Pentriad HEO system has some ability to avoid interference events with LEO systems, and therefore to operate under this approach. *Id.* at **3.**

4 Denali FNPRM Comments at **2.** It is not clear that Denali fully understands the approach adopted by the Commission. Denali continually refers to the technique as the "ITU-R methodology." There is, however, no ITU-R methodology for implementing this sharing regime. Either Denali has some other methodology in mind, or it is confusing the sharing technique of avoidance of in-line events with the ITU-R methodology for assessing compliance with the aggregate $EPFD_{down}$ limits addressed in the same FNPRM **(see** Section II *infra).* At one point Denali maintains that the "ITU-R methodology is premised on the necessity for NGSO FSS antennas being capable of pointing in different, or perhaps even multiple, directions," Denali FNPRM Comments at 2, an apparent reference to a spectrum sharing technique. In the very same paragraph, however, Denali also claims that the "ITU-R methodology would not allow for the calculation of the aggregate power flux density produced by all NGSO FSS systems," and that a methodology should not be adopted until "the calculations of all applicants can be prepared and reasonable limits discerned, if any," *id.,* statements that appear to relate to the entirely separate methodologies for assessing compliance with the aggregate EPFD limits. In any case, the Denali's new position and arguments are far from clear, and appear to reflect a serious unfamiliarity with, or misunderstanding of, the issues discussed in the Report & Order and FNRPM.

5 Denali FNPRM Comments at **3.**

This position is wholly inconsistent with the sharing regime adopted by the Commission. It is a grossly tardy plea that the Commission reconsider the Report & Order and adopt an alternative proposal – use of homogeneous constellations – while permitting other types of constellations to operate on a secondary basis to the selected constellation design.[6] Therefore the Commission should reject Denali's belated attempt to overturn the Commission's adoption of a sharing regime that equitably spreads the sharing burden among all of the applicants. As the Commission has already determined, there is simply no justification for affording special treatment to any particular kind of constellation, including HEO systems.'

Similarly, the Commission should reject Denali's untimely request that the Commission reverse its decision requiring NGSO FSS systems to provide global coverage.[8] Again, Denali did not file **a** timely petition for reconsideration of the Commission's coverage requirement. Moreover, the ability of NGSO FSS systems to provide global service was one of the fundamental justifications of WRC-97 for accommodating NGSO **FSS** systems in the Ku-band.' Denali's plea to exclude from the coverage requirement the entire southern hemisphere, to accommodate its GSO-like system, would thwart this important goal.

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6 See 47 U.S.C. § 405; 47 C.F.R. § 1.429(d).

7 Report & Order, ¶ 25.

8 Denali FNF'RM Comments at 4

9 For example, WRC-97 adopted Article S22 of the ITU Radio Regulations, which facilitated NGSO FSS entry in the subject bands, in order to further the ITU's mission of promoting the extension of "new telecommunications technologies to all the world's inhabitants." Resolution 130 (WRC-97, Geneva), *considerings* a). In doing so, it emphasized the urgent need for systems capable of providing universal service, and the ability of NGSO systems to provide the most isolated regions of the world with high-capacity and low-cost means of communication. *Id., considerings* b), *e),* and j). In adopting its coverage requirements, the Commission noted its intent to require all applicants to cover the majority of the earth's population. Report & Order, ¶ 63, n.93.

II. COMPLIANCE WITH AGGREGATE $EPFD_{down}$ LIMITS

In the FNPRM, the Commission proposed to adopt newly developed ITU-R methodologies contained in a Draft New Recommendation (the "DNR") for assessing compliance with the aggregate $EPFD_{down}$ limits that are applicable to NGSO FSS systems collectively." SkyBridge supported that proposal, but pointed out that there is no rational reason to actually assess compliance with these limits prior to the commencement of service of a fourth NGSO FSS system." SkyBridge also demonstrated that requiring all applicants to demonstrate compliance before this juncture would place an insurmountable hurdle before those applicants attempting to build-out and launch systems."

PanAmSat, on the other hand, urges the Commission to require each NGSO FSS proponent to demonstrate compliance with the ITU-R methodology "by the earlier of: (1) completion of critical design review; and **(2)** one and one-half years prior to launch of the first satellite."[13] PanAmSat also recommends that "all NGSO FSS licenses be conditioned on a showing of compliance with the aggregate interference limits" because this "will make clear to NGSO FSS licensees that there is an additional regulatory requirement they must satisfy before they may operate their systems."[14]

PanAmSat ignores the obvious fact that it is not within the power of any individual applicant to make such a showing on its own. Put simply, PanAmSat's proposal would make it impossible for any system to commence service.

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10 FNPRM, ¶ 86.

11 SkyBridge FNPRM Comments at **7.**

12 *Id.* at 6-7.

13 PanAmSat FNPRM Comments at 1.

14 *Id.* at 4.

As SkyBridge explained in its comments, and PanAmSat acknowledges, even though some of the methodologies described in the DNR are relatively simple to implement, the NGSO FSS operators are fully entitled under the DNR to demonstrate compliance under the most complex of the methodologies, if necessary, as these overestimate the interference by the least amount. Indeed, any showing involving all of the current applicants would certainly necessitate use of the most detailed methodologies. These methodologies require detailed operational information on each system, likely including proprietary information about the constellations. Most of the proposed systems are simply not sufficiently advanced in design to permit such computations. Moreover, such computations will require a high level of cooperation among the operators. Licensees that are not progressing expeditiously with their systems will have no incentive (and likely no resources) to contribute to this considerable effort. The Commission's rules should not hold the serious licensees hostage to others that have no incentive whatsoever to see other systems launched. The result would be that no system would ever launch.

Fortunately, as SkyBridge has explained previously, due to the mathematical relationship between the single entry and the aggregate limits, there can be no legitimate concern about violation of the aggregate limits until at least 3.5 NGSO FSS systems are operating co-frequency at full capacity. No party, not even PanAmSat, has disputed this fact.[15]

Therefore, the Commission should not require a demonstration of compliance until a fourth NGSO FSS system seeks to deploy. At that time, only those systems operating or planning to commence operation imminently should be required to collectively demonstrate

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15 See. e.g., SkyBridge FNPRM Comments at 7

compliance with aggregate limits.[16] This would prevent applicants that have not progressed with the build-out of their systems from delaying those operators that have.

In the meantime, the Commission can and should include in each license a statement putting the licensees on notice that, once a fourth system seeks to commence operations, the Commission may require all of the operating licensees to collectively demonstrate compliance using the most relevant ITU-R methodology approved at that point in time (presumably the DNR or its progeny)." Such an approach takes into account the current immature state of development of many of the systems, while fully protecting the GSO operators operating in the shared bands in the event that more than three NGSO FSS systems commence co-frequency operation.[18] In addition, such a condition would fully address PanAmSat's concern that the Commission implement "a defense against the argument, should changes be needed to bring an NGSO FSS system into compliance with the aggregate limits, that the Commission has improperly modified the license for the system.""

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16 The showing would, of course, need to be repeated should additional systems seek to enter at a later time.

17 SkyBridge NPRM Comments at 26.

18 As SkyBridge has stated, if a new entrant cannot be accommodated without causing a violation of the limits, the Commission should require all operators to equitably share the burden of taking the steps necessary (such as reducing power levels or number of beams) to permit entry of the licensed system in accordance with limits. SkyBridge FNPRM Comments at 8, n.19.

19 PanAmSat FNPRM Comments at 4. It is not the case that "[i]f . . . it were determined that the NGSO FSS systems did not comply with the aggregate limit, the Commission would have to choose between protecting GSO FSS systems against interference and jeopardizing the billions of dollars that the NGSO FSS operators already had invested in their systems." *Id.* at 3. Clearly the aggregate limits must be respected. Any NGSO FSS operator that does not build into its system sufficient flexibility to accommodate a fourth NGSO FSS operator (or more) is taking a risk that significant constraints may later be imposed on its system. In any case, PanAmSat's proposal, which would ensure that no system is ever launched, must be rejected.

CONCLUSION

For the reasons given above, the Commission should reject the proposals of Denali and PanAmSat, and adopt proposals consistent with those contained in the FNPRM and the comments of SkyBridge in this proceeding.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Reply Comments of SkyBridge L.L.C. was served this 15th day of October, 2002, by first class U.S. mail, postage prepaid, on the following:

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